

Talking Improvement

The Improvement Cymru Podcast

Episode: Design Thinking

Host: Mark Griffiths

Guest(s): Dr Philip Webb

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Intro

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Mark Griffiths: I'm Mark Griffiths, My guest today is Dr Philip Webb. After achieving his PHD in Cell & Molecular Biology, Phil's career has spanned the private sector at Astra Zeneca and the NHS, where he was All Wales Commissioner for cancer and blood services. In 2021, Phil became Chief Executive of Respiratory Innovation Wales, a not for profit company designed to innovate in the area of lung health and wellbeing here in Wales.

I really want to discuss design thinking methodology with you, which I know is something you're very passionate about, and something at the heart of the organisation you run, Respiratory Innovation Wales. I'd love to know first, how did you develop an interest in respiratory innovation?

[01:20]

Philip Webb: So that's a long answer. But I think in summary, it's doing everything that I've done both academically and through a number of different kind of career pathways. Just lead you to believe that it's actually not the particular career that

you're on at the particular moment, but it's about the amalgamation and the use of everything that you've learned to try and improve things and outcomes for people and patients, whether that's in the industry, whether you're working for public sector, my philosophy has always been to try and improve things for people, irrespective of what job that I've done. I think the path to Respiratory Innovation Wales was along the lines of, it afforded me the opportunity to use the skills and experience that I picked up over my career to actually make a difference for people and to create things that are novel, developed technologies that are both novel and useful and actually be able to help organisations collaborate and deploy them, that we make a difference for the way that people live well.

[02:23]

Mark Griffiths: That leads us really nicely into this, the whole topic of this conversation today around design thinking and making a difference to the populations we serve. So let's talk about the principles of design thinking, how would you define it? What's it mean to you?

[02:40]

Philip Webb: I think design thinking is a kind of a combination between an emotion and a philosophy for me, and the way that I look at it is this, okay? If we are truly putting people at the centre of everything that we do, then we must involve people in the process of coming up with new ideas and new ways of doing things, okay. Whether that's on the spectrum of service improvement or designing new technology. So part of this is understanding and collectively attributing the role that every individual has, who ends up being a service user as to what the next iteration or what the next innovation is to support them, having better outcomes, living well, living better, and be able to use and deploy the thing that's produced. So for me, that's the philosophy behind it. We do things in public sector and in Wales to help people whether they be in industry, or whether they be patients or service users, or carers or family members, we're just citizens of Wales. And then that comes in with the emotional side of things. Because good design thinking feels like you've actually met people's needs. So the combination of that philosophy, and that emotional feeling you get when you know that you've done something right and people have had the appropriate input and their user centricity has been included as part of the way that we look, to develop the latest technology, or do service improvement. That for me feels more like design thinking, than anything that you would naturally read from either a textbook, or a consultancy company telling you how to do it. And I've had both done to me. And I've come up with those two things, get the philosophy correct, and get the emotion and the feeling correct. And you've got design thinking.

[04:24]

Mark Griffiths: I think that's really interesting and really important, Phil. Design thinking is like, quality improvement in some respects in that it uses structured processes. But it really emphasises the behavioural elements, the human factors, being human centred. And the emotions that drive our behaviour, and how we can use design thinking to make changes to people's lives. Whereas perhaps the improvement aspects, is trying to understand these principles, and the processes that can make changes, bringing those two together, then Phil, design thinking and improvement science. How do you think the two relate to one another or how do they complement each other?

[05:04]

Philip Webb: I think the integration of both those things you mentioned Mark, are largely around 'can what you do change somebody's behaviour?' And how subtly you can do that in a way that the person doesn't actually think they're making a massive difference in their behaviour in order to achieve an objective. So the most interesting technology that I always go back to is a mobile phone. So if you actually look at how mobile phones have changed people's behaviour, and it is interesting, so there was a survey undertaken about what the most common function of a mobile phone was. And it's not to make a phone call. It's actually to take a picture. So mobile phones started from a technology about reducing the size and the engineering around what we would call the old fashioned way of phoning, yeah, picking up a receiver, putting a dial manually into a dial tone. And then if you're old enough, going through a switchboard, or if you're a little bit younger than that, just going through to the person that you phoned, okay, so it started off with that, but the design concepts massively changed. And it changed because people's actual use of the devices that we use to make a phone changed, and people who are designing phones got their feedback and suddenly realised, they're not manufacturing phones anymore. They're manufacturing devices around communication and connectivity that include things that would have been given to other technologies like cameras. So if you think about it, a phone is not just a phone anymore. It's a multi user device that allows and facilitates better communication at convenience, irrespective of what media it uses. And that for me is the true principles around integrating people's feelings about improvement and how things improve, people's philosophy about why they want to improve it. And actually adding something ultimately, which is very useful for the end user. So if you went through a group of 100 adults now and said, I'm going to remove your phone from you, you're not removing the ability to make a phone call, you're removing an ability for them to run their lives digitally through their phones. And that's a very different concept. But it's a really good concept I always go back to about how you design something.

[07:17]

Mark Griffiths: Do you think you can teach designing thinking then to people?

[07:22]

Philip Webb: That's an interesting question. And I've been thinking about it for quite a bit of time, you know, that there's a drive and a motivation, particularly in the innovation space and public centre that we can teach certain skills to allow people to generally improve. And I think that basic philosophy is correct. I do think with innovation, though, it's the essence and spirit of innovation that you could never teach. So you can always encourage people to be innovative and part of the teaching might be just the motivation, encouragement required to allow people the courage to innovate, but I don't actually think you can teach innovation itself. I think there are very few real innovators in our society and trying to capture that, it's not a skills based thing. I think it's more of an emotional way of looking at the world. So can you teach the principles of it? Possibly, yes. Can you teach somebody to be innovative? I think it has to come from inside them.

[08:24]

Mark Griffiths: Yeah, and I'm sure you'll agree Phil, one of the key elements of it is about being able to empathise, to understand the problems that people face. And then to characterise the problems. And not everybody has that innate ability, as you say, it's something that's hard perhaps, to teach, it's maybe more instinctive.

[8:42]

Philip Webb: And it's a very multifaceted skill that relies on your ability to do a whole range of things that as human beings we kind of take for granted sometimes. So we very infrequently listen to what people are actually telling us. I've worked in a number of organisations that say or claim that they will do design thinking, but they never actually listened to the end user, ever. And they never take what the end user says in the same value that they should with anyone else involved in that process. So there's a respect and a value set around design thinking that often doesn't exist when you're actually just going through the process of design thinking. So how you respect to everyone involved in that process, how you give a tribute and weight to the fact that somebody has got the courage to speak up about something different, how you then curate that into something that makes a difference to the end users and be centred around the end users, okay. It's quite a skill set that doesn't ubiquitously exist when we look at public sector or even in industry. And some of the drivers that drive us aren't related to those kinds of softer skills anyway. So it's quite a delicate balance that you have to achieve. And not everyone can achieve that kind of balance. Some people are more naturally gifted at it than other people are. Ultimately though, you have to have a driver that tells you that the status quo isn't acceptable. And that really doesn't fit into mainstream thinking. Right? So if you look about the way that human behaviours coalesce and centralise, you're thinking about a mind-set that exists on the outer rim of that, it's not part of the existing mind frame that we've got about accepting what we've got it even in the way that we look at improving the NHS as an issue. People have a mind-set to accept what the NHS currently is, rather than identify and be courageous enough to say that it isn't what we want anymore. And the ability to elicit information that drives change, and design processes around that don't naturally occur, because we're so set on what we think we already have.

[10:51]

Mark Griffiths: Going back to what you said about your mobile phone Phil, and how it's used today, people often think about design thinking in the context, perhaps of creating a mobile phone or some software package, think, Google or Apple or Siri. But when we think about the NHS Phil and you've worked in it for many years now. And when you see how a struggle it is to introduce into mainstream the likes of innovations into our daily work within the NHS, how do you think we can introduce design thinking into the healthcare system to make it more prominent and to have a larger part to play in the work that we do?

[11:28]

Philip Webb: I think Mark, the answer to that is having the courage to do something about it. So it's creating an environment, and a set of behaviours that won't put any element of the NHS as kind of sacred cows. So we know what our issues really are. We've got a very expensive and very crumbling NHS estate, which is very high in the way it consumes energy. It definitely isn't sustainable and green. It definitely cannot be agile enough to meet a modern day societal needs, for the way that it's delivered.

And we have to be courageous enough to admit that that's the case and be open enough to do something about it and actually involve quite a big range of people, including service users and our citizens in that kind of conversation. If we are ever going to get to the place where we are brave enough to design think, why do we need a hospital? Is the way that we currently provide clinical services the way that should be provided because we provided them in exactly the same way over the last 70 years? Can we seriously and critically look at the fundamental building blocks of delivering care? What does a doctor really mean? What does a nurse really mean? Yeah, what do allied health professionals really do? How can we take on board that most of the tasks that we have in the NHS are repetitive, and therefore are amenable to machine learning? And the use of artificial intelligence? Have we got the courage to tackle these problems head on? And can we deploy it in a framework that makes it very easy for our population to access through the fact that technology and innovation and industry has already developed really fantastic ways of deploying things called mobile phones that we don't have to pay for, that the consumer pays for. So I think it starts from the correct environment to allow people to question what we've been holding as sacred cows, the way that we work, how we work, where we work, okay? Are any of those things really conducive to a modern society? My contention would be that they're not, the way that we deliver the services that are based around that footprint, aren't, but we lack the courage to be able to question them at the moment to provide what the solution might be in the future.

[13:51]

Mark Griffiths: Well, you're at the vanguard of a lot of innovations and improvements within Respiratory Innovation Wales [RIW]. So in RIW, can you give an example, case studies or some work that's going on where design thinking is being used?

[14:06]

Philip Webb: So yeah, we have and actually part of this is not just keeping the knowledge in particular organisations, but being able to disseminate and just reach it quite widely. And I think in this sense, Wales does have an advantage compared to the NHS in England, and potentially some of the other areas because you know, that we're well integrated, and we're federated to be able to share information. So some of the examples that I'll talk about now are things like, how do we use people's voices to become the next diagnostic paradigm. So we believe working in collaboration with our academic partners, and our industry partners, that a voice recording of you saying, in particular voice cassette for 60 seconds, would be the gateway for us to develop a classifier that will tell you whether you've got a respiratory condition or not. And in fact, whether you've got a mental health condition or not, and allow you as the owner of a phone to be able to continuously monitor yourself just by using your voice recordings, and getting that trained machine learning back to tell you whether there's something wrong with you. So that is a real project it's called Project ARIA, we're doing it in conjunction with a number of academic partners, and potentially global partners in Wales. And we think that the promotion of voice as your next diagnostic strategy could be something that's not just innovative now, but could lead on to 20 to 30 years' worth of innovation in the future. If we believe because of the penetration of mobile phones, bearing in mind that 90% of all adults have got a smartphone now, that the best way to diagnose somebody is just speaking to your phone which you're used to doing anyway, that

that would revolutionise the way that we run diagnostics and screening potential in the future, for those conditions that are amenable to have sensitivity and specificity in the way that you're recording your voice and the inferences made from the AI. So that's just one example. We're really interested in developing our network around 3D printing with our academic and industry partners. So our ability to be able to print things that break routinely in the NHS, little bits of plastic on infusion pumps, the ability to potentially recycle plastic waste and develop devices to monitor your ear health or potentially your eye health. Our integration with the way that we're using 3D printing to prototype things, our ability to take those prototypes to the next stage of development to see whether we could develop a smart, intelligent and net zero dwelling from the way that we're recycling plastic, reusing plastic, looking at the technology development of creating supercomputers out of plastic bricks and then federating them around your house so that not only would your house be built differently and more affordably and more sustainably, it will also manage your airflow through the house. So one of the most important prognostic issues that you have as a person with a respiratory condition is your environment, pollutants, the relative status of microbial contamination in your house and your standard of housing. So if we can revolutionise the way that we build houses to deal with them, we start getting far more into the way that we manage population health, through the way that people buy houses in the future, which fundamentally improves overall health and wellbeing in the future, and arrays data in a way that they know what their choices they're making in everyday life. So it's actually quite explosive thinking. So if you can build things this way, why can't we build everything this way, whether it's a dwelling, whether it's the next hospital that might get built, whether that's your home, whether that's a GP practice, whether that's the way that we're looking at energy. So we're trying to look at everything that our society values, and reinvent the way that we're putting all these technologies together in things that people will want to buy, because that's our biggest influence about how you live. Our influence over your health and wellbeing is that the episodic short, contractual time that you've got with a healthcare professional, its helping you live better and living well. And we will do that through the way that we're innovating and things that you find mundane, like your house, or your car, or how you use energy.

[18:05]

Mark Griffiths: Yeah, and these are some of the wider social determinants of health aren't they, where a lot of the health benefits can be realised. So it really does seem Phil, what you're saying is that, through design thinking, using applications such as artificial intelligence, machine learning, 3D printing, it has the potential to have a big impact on the improvement process and on people's health and wellbeing. But perhaps, the elephant in the room talking about health and wellbeing and of course, the last two years has been dominated by COVID. And many people have been restricted to working in isolation, working from home. And we're talking about a future way of hybrid working, mixing home working with office working, do you think this is going to have a major impact upon our ability to collaborate in the future, and to take forward design thinking and innovations?

[19:02]

Philip Webb: I think it's probably not going to have the impact that we ever thought it was going to have. Because actually, our ability to communicate through digital technology is unprecedented at the moment. People don't actually realise when you

ask them because they never think of this, but that in your hand, you've got a supercomputer that's 3.6 million times more powerful than the computers that launched Apollo 14. So it's not the technology that's the inhibitor, nor is it the way that we actually are starting to use the technology. So people, particularly kids now are very used to asking Alexa questions they find difficult in their homework, or we're used to FaceTiming and Instagramming and everything is live and immediate and real time. Right. So I don't think that will hinder innovation, I think it will accelerate innovation. The difficulty that I see we're having is trying to iterate and integrate that type of technology revolution, in our current footprint in the way that we're currently thinking about health and social care. So it comes back to this issue about marrying up emotions, philosophy, and a mind-set to be able to do something which you can't necessarily teach through a tool programme. People have got to want to use their technologies to their most optimum effect. And we have to be able to deliver it in a way that gives convenience and time back to the end user. So there are not many people who can book a GP appointment through their application on their phone. But almost everyone can book a hotel for 1000s of pounds and fly off to the Caribbean through the exactly the same technology. So there is a de-synchronicity between what we can do technologically and what we can actually deploy in the way that we're looking at the NHS. So I think it requires, and this is a big component around sixth Senedd using innovation to support recovery and reconstruction. We have to get back to principles around why are we really here? What are we trying to do? Who are we trying to do it for? And can we optimise our use of technology to be able to do it and not hide behind the NHS infrastructure for ICT is poor and over 30 years old, our estates are crumbling, okay, all these things are factually true. But why should they inhibit us looking at the next iteration of health and social care in the NHS? They shouldn't. If people need to knock things down and rebuild, that's exactly what we should be doing. And we should be doing it and rebuilding it in a way that is convenient and appropriate for our population in terms of what they need.

[21:38]

Mark Griffiths: That's a clarion call there, Phil and thinking about the technologies and tools that you're obviously familiar with and referring to, are there any tools or technologies that you have found have supported you to work collaboratively, especially in the design thinking and improvement or innovation space?

[21:57]

Philip Webb: I think most of the off shelf communication software packages that you've got allow you to be able to communicate and disseminate knowledge management. I don't think it's the technology that's going to be the problem. I think it's our ability to be able to federate that through large groups of people so that we can do it. And that's not just on a regional or national basis. I think that's on an international basis. So is it common for me to have conversations around innovation with people who are in very different time zones to me already? No, it's facilitated by the technology. The issue is, do people actually use the technology to be able to federate that like that on an international basis? No, they routinely don't, because we're incredibly insular in the way that we think about things. Some of the innovation that we're looking at is about how we distribute knowledge around a much wider international footprint. So one of the projects that we've been talking about, and I think you've been on there, on heads of innovation, is this concept about using AI to be able to identify where we're wasting our money on innovations that already exist.

So it's a bit weird thinking that we haven't got something that uses AI to tell us not to spend money in areas that other people have already developed quite mature products that are commercially viable. So as a health community, and as a health economy, why would we want to invest in things that people have already made? We should be deploying these things if they fit the use case that we actually have at a particular point in time. So disseminating knowledge, talking to people, communicating our ideas, isn't just a very parochial regional issue for us. It's a national, international issue. And we have technologies that allow us to get the best from Japan, the best from China, the best from the USA, the best from Canada, and federate that knowledge for the benefit societally for everyone. We just don't think that we can. And that's the biggest challenge around the whole process around this. It's the belief that you can use the technology to do this. And that's our biggest challenge.

[23:57]

Mark Griffiths: You referred earlier to the need to engage with the end users. And so collaboration and co-production seems quite central to you in this process. Do you think our organisational structures are ways of working around competition versus collaboration that this might inhibit design thinking, the way in which we're currently structured and function?

[24:21]

Philip Webb: So I don't think it supports it. I think some people will find and use it as an excuse not to. But you know, as well as I do Mark we sit every two weeks on a on a pan Wales basis and talk about things that impact us on innovation. So it's not that we can't, it's just getting people in the mind-set that they can, and they should. And this goes back to some of the drivers that we need to look at, it's about changing even people who work in the innovation space to want to be able to collaborate. So I don't think that there are any real barriers or challenges to getting that kind of federated approach. I don't think people are that hung up on their intellectual property that they would never talk to somebody else about a particular thing in the structure around Wales. And actually, my conversations largely around the international footprint on this, there are very few organisations who aren't willing to share something with you. Even if it's commercially sensitive, the bit that I find is that there's not enough people asking the questions, or having the commitment and the belief that they want to know what's happening elsewhere. I'm a member of two organisations, which is actually slightly unusual in a health and social care context. So RIW actually a limited company, So we're a member of the Confederation of British Industry and we're part of the European Health Alliance as well, which is a footprint of 70 different ecosystems around the world. So we have a particular use case that we're trying to develop in Wales to have a smart net zero, or net positive, intelligent dwelling built from recycled plastic.

A couple of weeks back, there was a meeting arranged by the European Health Care Alliance to talk to Italy and to talk to Germany and to talk to Holland about people that actually 3D printed prototype designs and actually use recycled plastic to make these types of dwellings. So, again, fundamentally assisted by our technologies, but you've got to have an awareness and a drive to want to talk to other people to do it. And quite frankly, Mark, it's about people recognising that this is really important and allowing people the time to be able to do it. So you get the usual thing from health

organisations which they believe that innovation is part of everyone's job plan and everyone should be thinking innovatively, but nobody's actually got the time or the headspace to do it. So if they wanted to change things, giving people the time, whether they're clinicians or people involved in the NHS, generally, to think about doing things differently, is probably something that's immediately doable. Rather than expecting people to do this as part of everything else. We live an incredibly busy, hectic, modern life. And the pressures post COVID and in COVID recovery on the health and social care system are very profound, and they're very fundamental. So asking people to do this on top of everything is a really big ask. And actually, it's an even bigger ask, bearing in mind the conversation, which doesn't come naturally to a lot of people, and people have to want to want change in order to drive themselves to do something differently, anyway.

[27:27]

Mark Griffiths: So heretical thought here, Phil, can we outsource some of this? So can we use citizen science, crowdsourcing? Can we encourage and empower our patients, the population, to drive the changes to use design thinking to bring about the outcomes that we want for them?

[27:45]

Philip Webb: I think that's definitely something that we should pursue. But it goes back to this issue about courage. So we also have to be accepting of the fact that the citizens of Wales may not like what they're receiving in terms of service offerings from us at the moment, okay. So this comes down to almost a Welsh Government perspective, actually, which is, failure is designed to be exactly that and punished accordingly and the way that we think about failure. That doesn't sit well within innovation. Out of every 10 things that I do, one might come off, if I'm lucky. If you're in the pharmaceutical industry, every 50,000 things that you actually research, one might come off, if you're lucky. We don't have a culture of accepting that failure is not just that, it's not just failure, failure is the advancement of knowledge. Whether something works or whether it doesn't work advances your knowledge in a particular field okay, you should be encouraged to do that. The way that our current system is set up, it punishes a child for wanting to try to walk. Yeah, and if you can't walk, you definitely can't run. And that's part of the philosophy we have to get out of, which is if we want a significantly different outcome for our population, and not just re-hash what we did yesterday, and expect a different outcome, which, incidentally, is Einstein's theory of madness, right? Then we have to allow people to have the courage and the bravery to fail at things, because that's just as important at succeeding in things. And the way that we're structured governance wise, currently around the health board footprint does not accept nor tolerate failure. That makes it very difficult in the way that we're currently constructed to do innovation. Because innovation is about accepting and learning from failure.

[29:27]

Mark Griffiths: Absolutely. A key mantra is to fail or flourish fast. And to fail forward, as you say you learn a lot from your mistakes, probably more than from a lot of your learning. Well. Dr. Philip Webb, thank you so much for your time today. It's been really valuable and instructive and insightful.

[29:48]

Outro

[Audio ends]